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# FACTORS BEHIND WEAK TAX MORALE: THE CASE OF EUROPEAN UNION COUNTRIES

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**Abstract.** *This article investigates the theoretical and practical aspects of tax morale among households in European Union countries. The attitude of households on tax payment is assessed quantitatively by employing a dichotomous logit-probit regression analysis. The research is based on household-level data received from the World Values Survey and the European Values Study. Weak tax morale among European Union households is mainly determined by the perception of corruption, disrespect to one's own country and parliament. Additionally, a household's tax morale depends on age, gender, religiousness, level of income and education. Based on the findings of this article, a more precise policy guidance is presented.*

**Keywords:** *tax morale, tax evasion, tax avoidance, willingness to pay taxes, logit-probit analysis.*

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## 1. Introduction

Payment of taxes is an agreement among tax payers and the state. Tax payers commit to pay taxes and the state provides public goods and security that otherwise would not be available in a market economy. However, a universal aversion to tax theory contradicts the previous statement in a way that every rational economic agent will tend to increase its wellbeing by reducing tax payments and seeking public benefits. Practical outcomes support this statement: for instance, 90 % of public income is raised from tax contributions, but, at the same time, one fifth consists of uncollected taxes. Therefore, attention to the practical and theoretical examination of factors that have the most pronounced influence to tax payment is growing rapidly.

Two main indicators – tax base and tax ratio – are unable to fully and comprehensively explain changes in tax payments, suggesting an existence of other explanatory variables. This is the reason behind the growing attention to the alternative factors, which could disclose factors under unwillingness to pay taxes as more accurate. The main drawback of tax morale studies is the lack of suitable data sources: the assessments in this field are based on data provided by surveys, experiments, or laboratory outcomes, since tax evasion pertains to a criminal background.

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The aim of this paper is to reveal factors affecting unwillingness to pay taxes in European Union countries. The analysis of tax morale is based on the data provided by the World Values Survey and the European Values Study. Data received from these surveys are quantitatively assessed by employing dichotomous logit-probit regression models. In this paper, the author runs 132 logit-probit regression models for all European Union countries separately in periods starting from 1981 till 2013. The most significant factors behind unwillingness to pay taxes are revealed and described for every country. Results of this paper are beneficial for practitioners, because public authorities could direct their efforts more precisely to increase tax compliance, and for academia, as views on the alternative factors under tax payers' decisions are still quite rare.

Without the introduction and conclusions, this paper constitutes of four main sections. The second section reveals the importance of taxes in contemporary economy. Third section deals with main factors behind tax collection. In the fourth section, the methodological issues of quantitative assessment of tax morale are presented. In the fifth section of this paper, the results of quantitative assessment of tax morale are demonstrated. Some theoretical ideas (in the third section of this paper) to some extent have been published by the author (Rutkauskas, V., and Ivaškaitė-Tamošiūnė, V. (2015). *Vengimas mokėti mokesčius ir jo vertinimas Baltijos šalyse. Pinigų studijos*, 15 (2), pp. 74–87); however, this article presents a much broader and deeper assessment of tax morale questions.

## **2. Role of taxation in economy**

Taxes are affecting economy and behavior of tax payers in different ways. As Levine-Schayowitz (2005) presents, when governments raise taxes, people alter their behaviors and make decisions they would not make otherwise. This suggests that when the behavior of private citizens is affected by a tax, the allocation of resources changes as well. Because taxes raise the prices buyers pay, providing incentives to consume less, and the lower the prices sellers receive, providing incentives to produce less, the size of the market shrinks below its optimum level in the sense that revenues raised by government taxation may be less than the distorting market outcomes. Therefore, to better understand the impact of taxation on behavior, it is necessary to consider how taxes influence the prices consumers pay, the quantities consumers demand, and the resulting tax revenues raised. Changes in tax policies also affect decisions to participate in the labor market, the choice of occupation, tax avoidance schemes, and the degree of tax evasion activities through participation in the formal or informal sector of the economy.

Taxes constitute the main part of the public sector income in modern economies (see Fig. No. 1). Usually changes in tax collection determine whether the government is running a budget surplus or deficit. In the case of the public sector having more income and savings rather than expenditures, public spending towards consumption and

investment increases without building up debt. This makes a positive contribution to the general economy because public spending increases *ceteris paribus* aggregate demand. In the case of public expenditure remaining higher for a longer period, the widening gap between income and expenditure needs to be covered by borrowed funds or decrease in reserves (in case a country has any reserves available). Both outcomes are generally unwelcome, because the growth of debt means an increase in debt burden for future generations and, usually, it is a leading indicator for future tax increases.

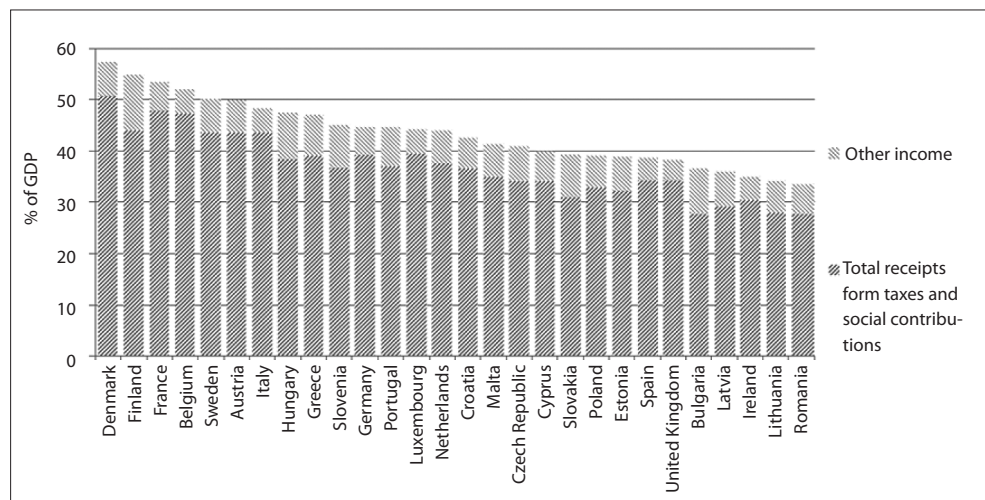


FIG. No. 1. **Income sources of General government in 2014**

Sources: Eurostat and author's calculations.

Three taxation sources – value added tax, taxes on income and wealth and social contributions – are the main ones, as they amounted up to 83-84 % of total tax income in the period from 2002 till 2015 in the euro area countries (see Fig. No. 2). In this particular case, only countries of the euro area have been presented because the majority of the European Union non-euro area countries are lacking comprehensive who-to-whom statistics; however, it could be assumed that, in general, tax income structure in the whole of European Union is very close to that presented in Fig. No. 2. As this paper investigates issues behind tax morale only among households, it is important to clarify the share that households hold in tax contributions. It is clear that income and wealth taxes as well as social contributions (the majority of them) are paid by households. National accounts do not provide final payers of value added tax and put it as payment made by the total national economy. However, value added tax is recorded as being borne by purchasers, not sellers, and then only by those purchasers who are not able to deduct it. Thus, the greater part of this tax is recorded as being paid on final uses, mainly on households for their consumption (European Commission, 2013). Based on this, an assumption in this paper is made that all value-added taxes have been paid solely by households. Detailed

national accounts data reveal that in the period between 2002 and 2015, in the euro area, nearly 77-78 % of general government total income funds were received as taxes paid by households, since households are the main payers of taxes (see Fig. No. 2). Also, an assumption could be made that a close four-fifth of all tax income in the European Union has been paid by households. Thus, an investigation of willingness to pay taxes should be mainly directed at households and their behavioral determinants.

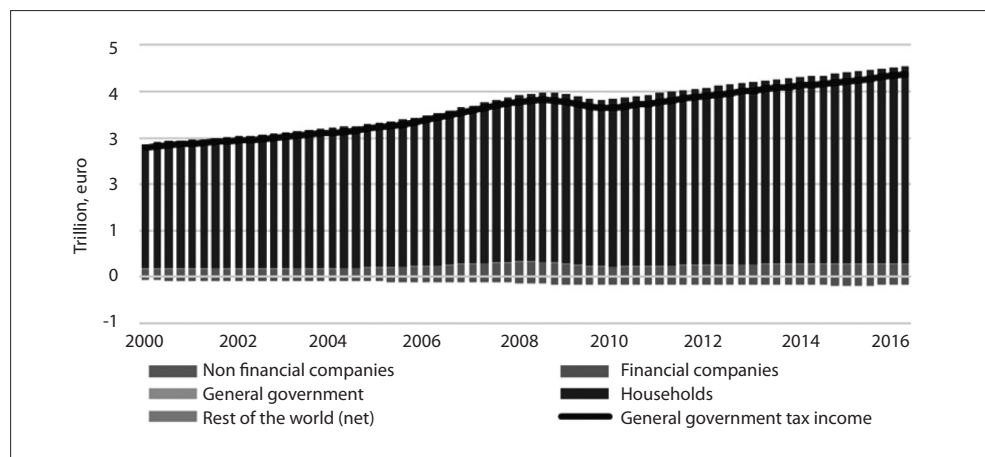


FIG. No. 2. **General government tax income structure by payer in the euro area**

Sources: ECB Statistical Data Warehouse and author's calculations.

### 3. Factors behind tax collection

In contemporary economic theory, the payment of taxes is a bilateral agreement between an economic agent and the state, because the latter one, as has been discussed in the second section of this paper, is basically grounded on that way of funding. Economic agents agree to pay taxes to the state in order to receive public goods and security in return. At the same time, economic agents are rational seekers of benefit as compared to cost and will try to avoid or minimise tax payment and will simultaneously seek public goods and security (see Fig. No. 3). Samuelson (1954) argued that the private provision of public goods will be inefficiently low because everyone will have an incentive to “free ride” on the private purchases of others. The theory of general reluctance to pay taxes also brings arguments that are contrary to the concept of conscious taxpayers’ agreement with the state. The fiscal illusion theory adds that a rational economic agent realises the need to have balanced public finance (the expenditures on public goods and security should not exceed income of the state in the long run). Notwithstanding this, a rational economic agent tends to seek financial benefits from the state and not pay for public goods and services via taxes. Thus, this behavior is assessed as irrational.

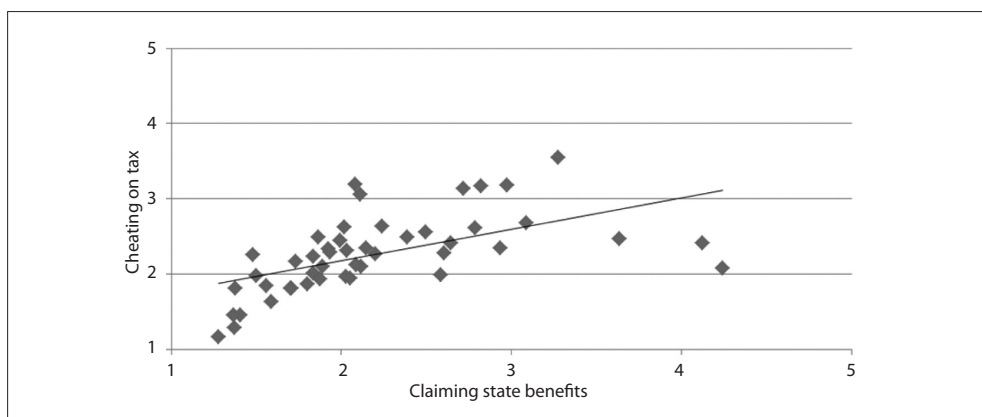


FIG. No. 3. **The relation of cheating on tax and claiming state benefits**

Sources: European Value Study (2008) and author's calculations.

Note: the growth in numbers represents a greater justification.

There are three possible ways to deal with taxation: 1) agree to pay taxes; 2) evade taxes; 3) avoid taxes. Agreement to pay taxes is not under aim of this paper, thus will not be assessed further in this article. Tax evasion and tax avoidance have at once similar and different meanings that must be clarified. According to the Organization for Economic Cooperation and Development, tax evasion is linked to illegal agreements among parties in order to conceal on taxes or elude for fulfilment tax liabilities. Meanwhile, tax avoidance is linked to searching for legal abilities enabling to diminish tax payments (OECD, 2015). For the purpose of this article, differences between tax evasion and tax avoidance are not that important because the result of general unwillingness to pay taxes is under concern and not the type of it (whether this is evasion or avoidance). By taking this into account, in the scope of this paper, tax evasion and tax avoidance have been taken as synonyms.

The most famous income tax avoidance model was presented in 1972 by M. Allingham and A. Sandmo. Their research was based on G. S. Becker's work, titled *Crime and Punishment: An Economic Approach*. In this paper, G. S. Becker proposes to look at tax payment as an optimal portfolio formation exercise, where a tax payer rather chooses to take risky position and not to pay taxes, but faces probability to be audited by tax authority. Either that, or a tax payer can choose a safe portfolio and pay taxes as it is stated in the law. S. Yitzhaki (1974) complemented the model with a fine in case the fact of tax evasion is detected. Such an approach allows for investigating the sensitivity of tax payer behaviour to factors like probability to be audited, fines, tax rate, etc. However, this model receives some critique that is acknowledged by authors, too. The weakest point is the made assumption that a tax payer receives benefit only by avoiding paying taxes, because the classical model does not consider the economic goods and services that are provided by the state. Thus, the only rational outcome, in this case, would be to avoid paying taxes and free-ride as it is suggested by Samuelson (1954). This drawback

is well perceived by the authors; however, because of its simplicity, this model is still commonly used to explain unwillingness to pay taxes.

Why are people paying taxes? This question has been raised by J. Alm et al. (1992) and the results of their experiment suggest that compliance occurs because some individuals overweigh the low probability of audit, although such overweighing is not universal. Compliance does not occur simply because individuals believe that evasion is wrong, since subject behavior is unchanged using either neutral or loaded terms. Moreover, there is evidence that individuals pay taxes because they value the public goods that their taxes are financing. An increase in the amount that individuals receive from a given tax payment increases their compliance rate. At this stage, it should be noted that individuals exhibit a remarkable diversity in behavior. They sometimes appear to overweigh low probabilities, they sometimes appear to be risk-seeking; they are on occasion cooperative, and at other times they are free-riders.

TABLE No. 1. The quantitative assessment of factors behind tax morale

Reference	Sample and econometrics	Tested variables	Significant variables
B. Torgler (2005)	Switzerland. Data from the ISSP. Year 1998. Weighted ordered probit estimation	Gender, age, marital status, education, employment status, personal income, church attendance, direct democracy, trust placed in the court and legal system, tax rate, fine rate and audit probability, culture variables (language dummy variables)	Education (+) Students and pensioners (+) Trust placed in the court and legal system (+) Religiousness (+) Democracy (direct) (+)
J. Martínez-Vázquez, B. Torgler (2005)	Spain. Data from WVS and EVS. Years 1981, 1990, 1995 and 1999/2000. Weighted ordered probit estimation.	Gender, age, marital status, employment status, religiousness, trust placed in the parliament, national pride, time dummy variables	Tax morale is stronger in the 90s than in the 80s Age and religiousness (+) Upper-class individuals (-) Trust in the parliament and national pride (+)
J. Prieto et al. (2006)	Spain. Data from the ISSP. Year 1998	Gender, age, marital status, education, self-employed, social class, size of municipality of residence, voted political party	Age (+) Self-employed (-) Voters for nationwide parties (+)
B. Torgler, F. G. Schneider (2006)	Spain, Switzerland and Belgium. Data from the WVS (1995-97) and the EVS (1999-2000). Weighted ordered probit estimation	Gender, age, marital status, education, employment status, social class, personal income, church attendance, direct democracy, national pride, trust in political institutions and government, attitude towards democracy, personal income tax rate, fine rate and audit probability (for Switzerland), culture variables (regional and language dummy variables).	Cultural and regional differences affect tax morale in both Switzerland and Spain Trust placed in the legal system, the government and parliament, national pride, and prodemocratic attitudes (+) Religiousness (Belgium and Switzerland ) (+) Direct democracy (Switzerland) (+) Women (+)

TABLE No 1 (Continuation)

Reference	Sample and econometrics	Tested variables	Significant variables
B. Torgler (2006)	32 world countries (mainly EU). Data from the WVS (1995-1997). Weighted ordered probit estimation	Gender, age, marital status, education, employment status, social class, financial situation, risk aversion, religiousness (church attendance, religious education, activity in a church group, the importance of religion, religious guidance, trust placed in church), corruption, trustworthiness	Religiousness (+) Age (+) Risk aversion (+) Upper-class individuals (-) Financial satisfaction (+) Retired, home workers, and part time employed (+) Women (+) Married (+) Living together (-) Education (-) Trustworthiness (+) Perceived corruption (-)
J. Alm, B. Torgler (2006)	USA and Spain. Data from the WVS. 1999-2000. Common cross-country slopes are imposed. Weighted ordered probit estimation	Gender, age, marital status, education, employment status, church attendance, trust placed in the parliament, country dummy variables	Tax morale is lower in Spain than in the USA Age (+) Religiousness (+) Women (+) Married (+)
J. Alm, B. Torgler (2006)	16 EU countries. Data from the WVS (1990-93). Common cross-country slopes are imposed. Weighted ordered probit estimation	Gender, age, marital status, employment status, church attendance, country dummy variables	Age (+) Religiousness (+) Self-employed (+) Pensioners (+) Married (+)
R. G. Cummings et al. (2007)	Botswana (1999) and South Africa (2000). Data from Afrobarometer. Common cross-country slopes are imposed. Ordered probit estimation	Gender, age, education, employment status, country dummy variables	Age (+)

Source: author based on Lago-Peñas and Lago-Peñas (2010).

Recent research results in tax payment field recognize that models like those proposed by M. Allingham and A. Sandmo lack explanatory power on some occasions. It is suggested that the behavioural economics theory could add to the classical model more realistic factors, such as psychological comfort, prestige of paying taxes and others. Daude et al. (2012) explain that tax morale is based on the aspiration to be honest with the state and other tax payers and trust the government. For instance, poor quality of public goods could be perceived by a tax payer as dishonest behaviour by the authorities and, thus, result in unwillingness to buy public goods by avoiding tax payment. T. O. Weber



et al (2014) claims that the main challenge in investigating tax morale is the criminal background of such activity. Lago-Peñas and Lago-Peñas (2010), in their paper, titled *The Determinants of Tax Morale in Comparative Perspective: Evidence from European Countries* are providing an informative summary of quantitative researches in the tax morale field, reviewing most common data, methods and, most importantly, tested and significant variables (see Table No. 1).

Based on the results provided in Table No. 2, it could be summarised that the main factors influencing tax morale are these: the justification of corruption, national pride, confidence placed in the parliament (government), the importance of religion, the level of income and education, employment and marital status, the gender and age of a respondent. Based on these findings, in the fourth section of this paper, a quantitative assessment of significant variables is presented.

#### 4. Quantitative assessment of tax morale

The scarcity of data is common for researches in the field of tax morale as such activity has a criminal background. One of the commonly used sources is the World Values Survey (WVS) and the European Values Study (EVS) data (see Table No. 2). These globally performed regular surveys investigate respondents' opinions of different fields, such as living conditions, family, religion, society, policy and economy. Martinez-Vazquez and Torgler (2005), Alm and Torgler (2006), Torgler and Schneider (2006), Lago- Peñas and Lago- Peñas (2010) have used WVS and EVS data for investigating tendencies within willingness to pay taxes. Moreover, WVS and WVS are based on a common methodology. Thus, data are comparable among time and countries.

TABLE No. 2. Independent variables used in assessing tax morale

Independent variable	Numerical expression of response
Acceptance of bribe	1 – never; ...; 10 – always
Age	X years
Confidence in parliament	1 – high; ...; 4 – non
Employment status	1 – employed; ...; 8 – unemployed
Gender	1 – men; 2 – women
Level of education	1 – non; ...; 8 – higher
Level of income	1 – small; ...; 10 – high
Marital status	1 – married; ...; 7 – not married
National proud	1 – high; ...; 4 – non
Religiousness	1 – yes; ...; 3 – no

Source: author's, based on WVS and EVS.

Considering that the survey data usually are categorical variables, according to Gujarati, (2004) a simple linear regression is not suitable and instead a *logit-probit* regression analysis model should be used. Such an approach is also supported by a

number of researchers in the tax morale field (see Table No. 1). As a dependent variable for analysis, the answers of individual households to the question *Cheating on taxes if you have a chance* are taken with possible answers varying from 1 (*never*) to 10 (*always*). In order to receive as much of an informative assessment as possible, 10 independent variables have been chosen (see Table No. 2). Moreover, Table No. 2 presents a numerical expression of response to particular questions that will be used further by interpreting the results of our analysis.

10 independent variables and one dependent variable have been considered in order to investigate the issues behind tax morale for every single European Union country and 2-8 are selected as significant. The significance of independent variables is based primarily on the measure of *p-value*. The suitability of the whole model (1) is assessed not by a coefficient of determination, as it is common for liner regressions, but by a share of classified cases. The case is assessed as classified, when the results received by the model are the same as collected during the survey for every individual response. As Gujarati (2004) suggests, more than 50 % of classified cases by the model allow for assessing the model as suitable (however, the bigger the share the better).

$$\ln \frac{P(TM_s^i=1)}{P(TM_s^i=0)} = C_s^i + b_1 G_s^i + b_2 A_s^i + b_3 MS_s^i + b_4 Ed_s^i + b_5 Em_s^i + b_6 I_s^i + b_7 R_s^i + b_8 CP_s^i + b_9 NP_s^i + b_{10} B_s^i \quad (1)$$

where: *i* – country; *s* – survey; *b<sub>n</sub>* – coefficient; *P* – probability; *C* – Constanta; *TM* – tax morale; *G* – gender; *A* – age; *MS* – marital status; *Ed* – education; *Em* – employment; *I* – income; *R* – religiosity; *CP* – confidence in parliament; *NP* – national proud; *B* – acceptance of bribe.

For the researchers in the tax morale field, it is common to use dichotomous (binary) instead of multinomial logit-probit regressions. According to Torgler and Schneider (2006), the main reason behind this is a lack of depended categorical indicators to perform any reliable analysis. To explain the main factors behind tax payers' behavior, at least 20 % of opposite indicators should appear for every combination of variables (the same rule is applied in other types of logit-probit regressions). Otherwise, the explanatory power of a model decreases sharply. However, some categories are lacking data to ensure this 20 % rule; thus, it is common to use dichotomous regressions instead of multinomial logit-probit ones. Thus, for the dependent variable – tax morale – two possible outcomes are assigned (1 or 0; instead of a range from 1 to 10). In the case of a respondent declaring that he never cheated on taxes, the outcome is “0”, as this shows strong tax morale. In the case of an answer to the question *Cheating on taxes if you have a chance* range being from 2 to 10, it has been assumed that the respondent lacks tax morale and the outcome is “1”. Based on this, the equation (1) could be rewritten as follows (2):

$$P(TM_s^i = 1) = \frac{e^z}{1+e^z} = \frac{1}{1+e^{-z}} \quad (3)$$

where:  $z = C_s^i + b_1G_s^i + b_2A_s^i + b_3MS_s^i + b_4Ed_s^i + b_5Em_s^i + b_6I_s^i + b_7R_s^i + b_8CP_s^i + b_9NP_s^i + b_{10}B_s^i$

Moreover, the importance of independent variables of the model is assessed by the odds ratio of coefficients. The odds ratio of coefficient is a specific ratio for logit-probit models and shows how a dependent variable could change in case one of independent variables increasing by 1 and all others remaining unchanged. The odds ratio is defined as the ratio of the probability of success  $P(Y=1)$  and failure  $P(Y=0)$  or  $P(Y=1)/P(Y=0)$ . This ratio is assumed as the main one in assessing the importance of any independent variables to a dependent one. The value of odds ratio could vary from close to 0 (in case a probability of failure is approaching to 100) and to infinity (in case a probability of success is approaching to 100).

TABLE No. 3. Independent variables used in assessing tax morale

		Change of independent variable	
		+ 1	- 1
Odds ratio	< 1	$P(Y=1) < P(Y=0)$ Growth in tax morale	$P(Y=1) > P(Y=0)$ Decrease in tax morale
	> 1	$P(Y=1) > P(Y=0)$ Decrease in tax morale	$P(Y=1) < P(Y=0)$ Growth in tax morale

Source: author.

By analysing a dependent variable, it is important to observe whether the value of an independent variable odds ratio is below or above 1. In case of the odds ratio being 1, the probabilities of success and failure are equal to 0.5. The growth of an independent variable's value by 1 with an odds ratio below 1 means that the dependent variable has a higher probability for success ( $P(Y=1)$ ) than failure ( $P(Y=0)$ ). On the contrary, the growth of an independent variable's value by 1 with an odds ratio above 1 means that the dependent variable has a lower probability for success ( $P(Y=1)$ ) than failure ( $P(Y=0)$ ). For the purpose of this paper, an assessment of independent variables odds ratios is presented in Table No. 3.

## 5. The results of tax morale analysis among European Union countries

During the period between 1981 and 2013, 132 surveys on individual households in all contemporary European Union countries have been conducted. The most covered countries, with 8 surveys performed during the abovementioned period, are Spain and Sweden, the least – Greece and Luxembourg. Data received for every single country have been assessed separately by applying a dichotomous logit-probit regression analysis and results, in an alphabetical order, are presented below (odds ratios could be found in Table No. 4).

The surveys in *Austria* have been conducted in 1990, 1999 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, national pride, religion and marital status. All these factors are statistically significant (the only exception being for the national pride factor in the last survey) and ensures 69-72 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more an individual will tend to accept bribe, the more one will try to evade paying taxes. The case of Austria suggests that citizens who foster less national pride will tend to evade taxes more, as it is the case with religiousness as well. Moreover, not married or single people present a greater probability in their behaviour to avoid taxes.

The surveys in Belgium have been conducted in 1981, 1990, 1999 and 2009. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are gender, national pride, trust placed in the parliament, and the perception of corruption. All these factors are statistically significant (based on p-value) and ensure 66-71 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Belgium suggests that citizens who foster less national pride or place less trust within the parliament will tend to evade taxes more. Moreover, men present a greater probability in their behaviour avoid taxes than women in Belgium.

The surveys in Bulgaria have been conducted in 1991, 1997, 1999, 2005 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, national pride, marital status, income and gender. All these factors are statistically significant (the only exception being for marital status in the first survey) and ensure 66-79 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more person will tend to accept bribery attempts, the more that individual will try to evade paying taxes. The case of Bulgaria suggests that citizens who foster less national pride will tend to evade taxes more; also, respondents that receive greater incomes will tend to evade taxes more. Moreover, not married or single people and men in particular present a greater probability in their behaviours to avoid taxes.

The surveys in Croatia have been conducted in 1996, 1999 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, confidence placed in the parliament, age and income. All these factors are statistically significant and ensure 70-73 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Croatia suggests that citizens who place less confidence within the parliament will tend to evade taxes more. Also, older people have a lesser tendency to avoid taxes, although wealthier people tend to cheat on taxes more.

The surveys in Cyprus have been conducted in 2006, 2008 and 2011. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, national pride, religion, and employment status. Not all factors are statistically significant for Cyprus; however, they all have been kept in model in order to ensure consistency among years and substantial share of positive cases (79-90 %). Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more an individual will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Cyprus suggests that citizens who foster less national pride will tend to evade taxes more, as it is the case with religiousness as well.

The surveys in the Czech Republic have been conducted in 1991, 1995, 1999 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, national pride, gender and age. All these factors are statistically significant and ensure 69-75 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more an individual will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of the Czech Republic suggests that citizens who foster less national pride will tend to evade taxes more. Moreover, women and older people are less probable to avoid taxes.

The surveys in Denmark have been conducted in 1981, 1990, 1999 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, confidence placed in the parliament, religiosity, age and gender. All these factors are statistically significant and ensure 61-71 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Denmark suggests that citizens who place less confidence within the parliament will tend to evade taxes more, as it is the case with individuals who espouse less religious behaviour. Moreover, men and younger respondents are regarded as more probable to avoid taxes.

The surveys in Estonia have been conducted in 1990, 1996, 1999, 2008 and 2011. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are perception of corruption, national pride, religion and marital status. All these factors are statistically significant and ensure 66-76 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Estonia suggests that citizens who foster less national pride will tend to evade taxes more. Moreover, males and younger individuals are more probable to avoid taxes.

The surveys in Finland have been conducted in 1981, 1990, 1996, 2000, 2005 and 2009. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are perception of corruption, age, gender, and religion. All

these factors are statistically significant as measured by p-value and ensure 66-70 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Finland suggests that citizens more devoted to religion tend to evade taxes less. Moreover, women and older people are regarded as less probable to avoid taxes in Finland.

The surveys in France have been conducted in 1981, 1990, 1999, 2006 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, age, gender, and national pride. All these factors are statistically significant as measured by p-value and ensures 66-70 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of France suggests that individuals who foster more national pride tend to evade taxes less. Moreover, women and older persons are less probable to avoid paying taxes.

The surveys in Germany have been conducted in 1981, 1990, 1997, 1999, 2006, 2008 and 2013. The latest survey is not suitable for this research, because there were no data on a dependent variable. Thus, a summary of results given below are from 6 surveys. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, age, status of employment, and national pride. All these factors are statistically significant as measured by p-value and ensure 67-76 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more an individual will tend to accept bribery attempts, the more one will be prone to evade paying taxes. Close to the odds ratio of the perception of corruption in Germany is national pride – the more a person fosters national pride, the more likely it is that individual will pay taxes. The case of Germany suggests that unemployed individuals or those with lower salaries will tend to evade taxes less. Moreover, older people are regarded as less probable to avoid taxes.

The surveys in Greece have been conducted in 1999 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption and national pride. All these factors are statistically significant (with an exception for national pride for the first survey) and ensure 65-77 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. Moreover, the case of Greece suggests that people who foster higher feelings of national pride will tend to avoid cheating on taxes more.

The surveys in Hungary have been conducted in 1982, 1991, 1998, 1999, 2008 and 2009. The survey conducted in 1982 is excluded in this paper because no answers to the question on the willingness to pay taxes had been presented. The main factors behind tax

evasion, as suggested by a dichotomous logit-probit regression analysis in the reminder of surveys, are the perception of corruption, age, level of education, income and national pride. All these factors are statistically significant (with an exception for income for the fourth survey) as measured by p-value and ensure 68-81 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is national pride – the more an individual will foster national pride, the less one will try to evade paying taxes. The case of Hungary also suggests that the more citizens tend to accept bribery attempts the higher is the chance of them evading taxes. Moreover, individuals with a higher income and education will tend to evade taxes more, as it is the case with younger individuals.

The surveys in Ireland have been conducted in 1981, 1990, 1999 and 2008. The main factors behind tax evasion, as suggested by dichotomous logit-probit regression analysis, are the perception of corruption, age, gender, and national pride. All these factors are statistically significant as measured by p-value and ensure 66-70 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Ireland suggests that the more citizens foster national pride, the less they may evade taxes. Moreover, women and older people are less probable to avoid taxes.

The surveys in Italy have been conducted in 1981, 1990, 1999, 2005 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, age, and national pride. All these factors are statistically significant as measured by p-value and ensure 65-72 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Italy suggests that citizens who foster greater national pride have a lesser tendency to evade paying taxes. Moreover, older people are less probable to avoid taxes.

The surveys in Latvia have been conducted in 1990, 1996, 1999 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, age, gender and national pride. All these factors are statistically significant (with the exception of one year's model for the national pride indicator) as measured by p-value and ensure 70-76 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Latvia suggests better tax collection from those people who foster greater national pride. Moreover, women and older individuals present a lesser probability in their behaviour to avoid taxes.

The surveys in Lithuania have been conducted in 1990, 1997, 1999 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, age, income and national pride. All these factors



are statistically significant as measured by p-value and ensures 65-74 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Lithuania suggests that national pride plays significant role for citizens in making decisions whether to pay taxes or not: greater national pride is directly linked to stronger tax payments. Moreover, people with higher incomes tend to avoid taxes more.

TABLE No. 4. Variation of most important independent variables coefficients' odds ratios

Country	Gender	Age*	Marital status	Level of education	Employment status	Income	Religiousness	Confidence in Parliament	National proud	Acceptance of bribe
Austria			1.1-1.2				1.2		1.3-1.6	1.9-2.5
Belgium	0.6-0.8							1.3	1.3	1.3-1.4
Bulgaria	0.7		1.1			1.1-1.2			1.3-1.5	1.5-4.8
Croatia		1.0				1.1-1.2		1.2-1.4		1.7-2.6
Cyprus					0.9-1.1		1.2		1.2-1.4	2.6-4.5
Czech Rep.	0.6-0.7	1.0							1.2-1.4	1.4-2.0
Denmark	0.5-0.7	1.0					1.2-1.4	1.3-1.4		1.4-2.2
Estonia	0.6-0.8	1.0							1.2-1.4	1.5-7.0
Finland	0.5-0.7	1.0					1.2-1.6			1.9-2.3
France	0.6-0.7	1.0							1.2-1.5	1.3-1.5
Germany		1.0			0.9-1.1				1.2-1.5	1.4-3.0
Greece									1.2	1.5-2.0
Hungary		1.0		1.1-1.4		1.1			1.3-1.9	1.2-1.7
Ireland	0.6-0.7	1.0							1.4-1.8	1.7-2.3
Italy		1.0							1.2-1.3	1.2-2.8
Latvia	0.7	1.0							1.1-1.3	1.5-2.0
Lithuania		1.0				0.9-1.1			1.3-1.5	1.3-2.8
Luxembourg				1.2-1.3						1.4-1.8
Malta							1.4-2.2			2.3-5.7
Netherlands	0.6-0.8	1.0								1.6-3.4
Poland		1.0						1.4-1.7	1.5	1.4-5.3
Portugal		1.0					1.2			1.3-3.2
Romania		1.0	1.1					1.2-1.4	1.2-1.7	1.3-2.9
Slovakia		1.0							1.1-1.5	1.4-2.2
Slovenia	0.6-0.8	1.0							1.2-1.5	2-10
Spain		1.0					1.2-1.3		1.2-1.5	1.7-3.3
Sweden	0.6-0.7	1.0		1.1-1.2		1.1	1.2-1.5	1.3-1.6	1.2-1.4	1.4-2.1
UK		1.0					1.2-1.4			1.3-3.9

Source: author's calculations.

\* odds ratio for age is 0.94-0.99.



The surveys in Luxembourg have been conducted in 1999 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption and the level of education. All these factors are statistically significant as measured by p-value and ensure 60-67 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Luxembourg suggests that tax evasion increases in line with the growth of one's education level.

The surveys in Malta have been conducted in 1983, 1991, 1999 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption and religion. All these factors are statistically significant as measured by p-value and ensures 83-86 % of positive cases by the models. Based on n odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Malta suggests that more religious citizens tend to evade taxes less.

The surveys in the Netherlands have been conducted in 1981, 1990, 1999, 2006, 2008 and 2012. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, age and gender. All these factors are statistically significant as measured by p-value and ensures 63-74 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Netherlands suggests that older citizens will tend to evade taxes less (however, last survey showed slightly opposite estimations). Moreover, women tend to avoid taxes less.

The surveys in Poland have been conducted in 1989, 1990, 1997, 1999, 2005, 2008 and 2012. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, national pride, confidence placed within the parliament and age. All these factors are statistically significant as measured by p-value and ensure 63-76 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Poland suggests that people who place more confidence within the parliament and foster greater feelings of national pride tend to avoid taxes less as it is the case with the older generation.

The surveys in Portugal have been conducted in 1990, 1999 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, age and religiousness. All these factors are statistically significant as measured by p-value (except for the age in the last survey)

and ensure 61-79 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Portugal suggests that more religious and older people tend to avoid taxes less.

The surveys in Romania have been conducted in 1993, 1998, 1999, 2005, 2008 and 2012. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, national pride, confidence placed within the parliament, marital status and age. All these factors are statistically significant as measured by p-value and ensure 63-79 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Romania suggests that older people and those who foster greater national pride tend to avoid taxes less. Moreover, married people and those who place more confidence within the parliament tend to avoid paying taxes less.

The surveys in Slovakia have been conducted in 1991, 1998, 1999 and 2008. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, age and national pride. All these factors are statistically significant as measured by p-value (except age for the first survey) and ensure 64-76 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Portugal suggests that older people and those who foster greater national pride tend to avoid taxes less.

The surveys in Slovenia have been conducted in 1992, 1996, 1999, 2005, 2008 and 2011. The main factors behind tax evasion, as suggested by dichotomous logit-probit regression analysis, are the perception of corruption, gender, age and national pride. All these factors are statistically significant as measured by p-value (except gender for the fourth survey) and ensures 68-86 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Slovenia suggests that women, older people and those who foster greater national pride tend to avoid taxes less.

The surveys in Spain have been conducted in 1981, 1990, 1995, 1999, 2000, 2007, 2008 and 2011. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, age, religiousness and national pride. All these factors are statistically significant as measured by p-value (except religiousness for the fourth survey) and ensures 65-80 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the

more one will try to evade paying taxes. The case of Spain suggests that older, more religious citizens and those who foster greater national pride tend to avoid taxes less.

The surveys in Sweden have been conducted in 1981, 1982, 1990, 1996, 1999, 2006, 2009 and 2011. In 1981, the survey results in Sweden were presented by the WVS, in 1981, the same results were presented by the EVS; thus, these two surveys are evaluated as a single survey in this paper. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, national pride, confidence placed within the parliament, religiousness, the level of income and education, the age and gender of a respondent. All these factors are statistically significant as measured by p-value and ensure 65-73 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more an individual will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of Sweden suggests that older, more religious citizens, those who foster greater feelings of national pride and place confidence within the parliament tend to avoid taxes less. On the contrary, the ones with a higher level of education and income, as well as men in general, are more prone to avoid paying taxes.

The surveys in the United Kingdom have been conducted in 1981, 1990, 1999, 2005 and 2009. The main factors behind tax evasion, as suggested by a dichotomous logit-probit regression analysis, are the perception of corruption, age and religiousness. All these factors are statistically significant as measured by p-value (except for the acceptance of bribery attempts for the first survey) and ensure 66-77 % of positive cases by the models. Based on an odds ratio, the most significant factor behind tax evasion is the perception of corruption – the more a person will tend to accept bribery attempts, the more one will try to evade paying taxes. The case of the United Kingdom suggests that older, more religious citizens tend to avoid taxes less.

Results of the tax morale analysis in all European Union countries suggest that the common factors behind weak tax morale are a wide spread of corruption, weak national pride, age and gender. Based on this, it could be stated that people who are prone to take bribes, have weak national pride, are younger and are males possess a greater probability in their behaviour to avoid taxes. Moreover, religiousness and confidence placed within the parliament have a strong, direct, positive link with the willingness to pay taxes (see Table No. 4 and Fig. No. 4), as more religious tax payers and those who place more confidence within the parliament tend to cheat on taxes less. For some countries, the level of education is playing a role, while people who have received higher education tend to evade taxes more. The level of income and employment status give various results: on some occasion, these factors make a direct, for some – an indirect impact; thus, assessment depends on the country and year of the survey.

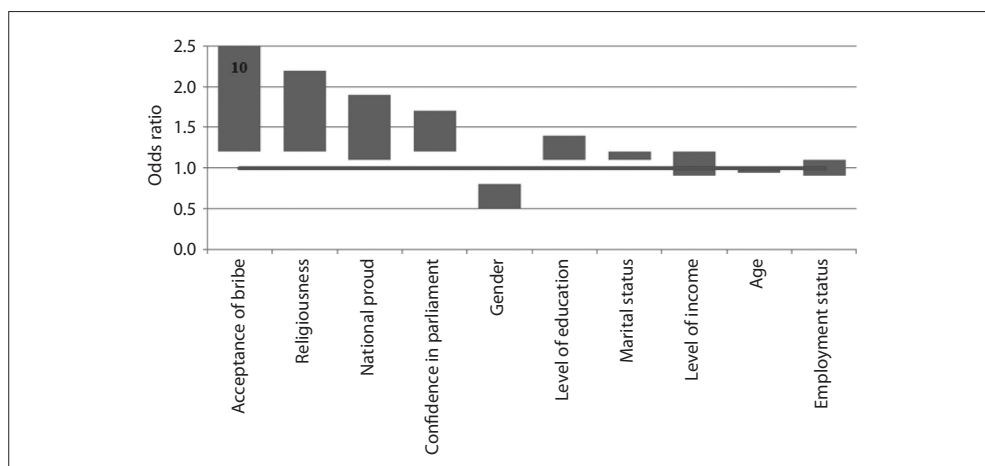


FIG. No. 4. The variation of odds ratios of independent variables sorted by distance from 1 (left – largest one)

Source: author's calculations.

These empirically assessed variables of tax morale in the European Union countries are guidelines for tax authorities in particular and for the public sector in general for seeking to increase tax collection. As the robust results of this research suggest (all of the regressions have more than 50 % of positive cases), the main efforts directed at increasing tax collection should be directed to fight corruption and foster national pride. More efforts of national authorities investigating tax evasion should be directed at males and younger citizens. Additionally, individuals with higher education and those with higher levels income tend to evade taxes more; however, this has been evidenced only for some of countries under investigation. Moreover, religiousness is closely linked to the proper payment of taxes and a high level of tax morale.

According to Weber (2014) tax morale could be increased by signing the “tax payer’s honor code”, as this in general will increase the dependence on society (thus, on national pride). Trust in government and tax authority plays a noticeable role for tax morale; thus, the image of public institutions should find a place in any government’s agenda. Moreover, the quality of public goods is not the least important to be considered while making decisions to pay taxes or not; thus, the quality of goods as well as the quality of the institutions themselves should be constantly monitored and increased (it is partly linked to corruption, trust placed within the parliament). Weber (2014) continues that public institutions with a reputation of using a coercive mechanism should find a way to earn the reputation of high quality service providers. E. F. Luttmer and M. Singhal (2014) add that cooperation between the state and the individual tax payer increases tax morale, as well as the dependency to the group and cultural effects, which, in the long run, could lead to higher tax compliance. Also, it should be important for tax authorities to investigate tax payers that are of younger age and male with greater depth

and attention, also not overlooking taxpayers who have acquired higher levels education and income. As this research suggests and as other authors confirm, the payment of taxes could be increased not only by applying pressure to tax payers, but also by employing soft measures.

## **6. Conclusion**

The main share of the public sector income constitutes of tax contributions. However, rational economic agents tend to simultaneously avoid tax payments and consume public goods. Classical models of unwillingness to pay taxes are not always able to explain factors behind weak tax morale. Empirically it is evidenced that higher taxes expenditures have negative correlation with a tax payment gap (thus, tax morale) suggesting a contradiction among mainstream thinking. Moreover, it suggests the existence of alternative factors rather than taxation base and tax rate. , the aim of this paper is to fulfill the gap of comprehensive analysis of tax morale in the European Union countries.

Issues behind weak tax morale are disclosed with alternative methods suggested by tax morale studies and is assessed quantitatively by employing a dichotomous logit-probit regression analysis for all the European Union countries on 132 occasions. The results of tax morale analysis in all of the European Union countries suggest that main factors behind weak tax morale are corruption and weak national pride. More efforts of national authorities while investigating tax evasion should be applied to males and tax payers of younger age. Additionally, more educated people and those with a higher income tend to evade taxes more; however, this has been evidenced only for some of the countries under investigation. Also, religiousness has a direct, strong and positive link (especially in some countries) to the willingness in paying taxes; also, people in marriage tend to evade taxes less.

A systematic assessment of factors behind weak tax morale, as it is presented by the author in this paper, are a set of guidelines for public authorities in the field of greater tax morale in a country and, additionally, better collection of taxes. Different measures, like signing the tax payer honor code, ensuring a better quality of public goods, putting more efforts to make citizens place more trust within the state and foster feelings of pride that relate to the state and an increase in patriotism should be employed in order to increase tax morale. After employing similar measures, the public sector could expect closing the gap between the real collection of taxes and planned tax collection, thus ensuring a better standing of public finance and the abilities to provide goods and services for the same households.

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